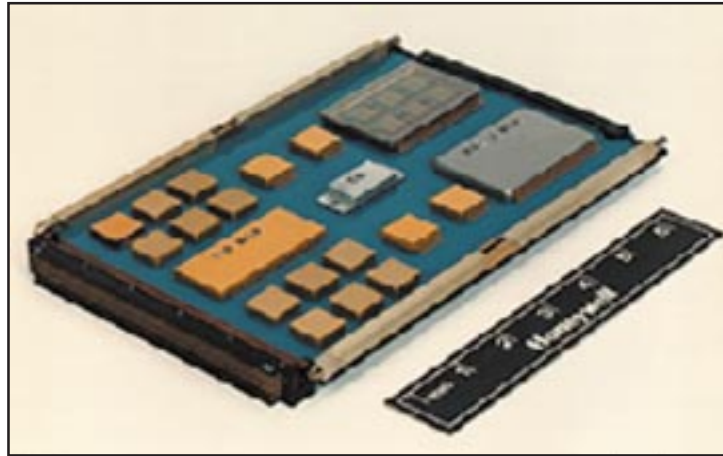




ADVANCED SPACEBORNE COMPUTER MODULE PROGRAM PIONEERS ON-BOARD PROCESSING TECHNOLOGIES

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Payoff

The Advanced Spaceborne Computer Module (ASCM) program pioneered the development of space-qualified microprocessors and computers for United States Air Force (USAF) satellites and strategic missiles. The development risk and cost of future on-board data processing systems for Air Force, Department of Defense (DoD), National Aeronautics and Space Administration (NASA), and commercial space systems are greatly reduced because of these on-board processing technologies. They are baselined into major programs including the Military Strategic and Tactical Relay Satellite Program, the Space Based Infrared System (SBIRS) Program and the Global Positioning System Program.

Accomplishment

The Space Vehicles Directorate's (VS's) ASCM program developed chips, multi-chip modules, boards and computer models that meet or exceed space performance and radiation requirements, therefore becoming the standard for space computers. This advanced computer technology has also been quickly transferred into civil and commercial space programs, with over 60 NASA and commercial satellites applying the technology.

Background

The ASCM program provided two industrial sources of 16-bit and 32-bit spaceborne computer and microelectronics components. Products met spacecraft system needs for high performance, environmentally qualified, low-cost space processing. The added processing capabilities provide space systems an increased autonomous operational capability and enable previously unrealizable capabilities at an affordable cost. In addition to military space systems, long-life commercial satellites operating in the Earth's radiation belts will directly benefit from this technology. Commercial applications that require high-reliability electronics or operate in stressing environments also directly benefit from these efforts. Such applications may include high-temperature automotive or aircraft electronics, air traffic control or critical medical electronics, or sensing and monitoring hardware used in nuclear power plants and hazardous waste sites. The VS Directorate developed the critical building blocks for advanced on-board processing technology for space missions using radiation-hardened electronics and advanced packaging. The two prime contractors were Honeywell and Lockheed Martin Federal Systems. Additional funding and technology were provided by Ballistic Missile Defense Office; Space and Missiles Systems Center System Program Offices; Producibility, Reliability and Manufacturability Office; Defense Special Weapons Agency; NASA; and the former Rome Laboratory.